Moving Targets: Instruction with iPads

Necia Parker-Gibson, MLIS*
Michelle Gibeault, MSLS
Marei Houpert,
Diplom Betriebswirtin (FH) International Agricultural Trade
International MS Rural Development, MS Agricultural Economics
David W. Mullins Library, University of Arkansas
365 N. McIlroy Ave., Fayetteville, AR 72701-4002
neciap@uark.edu corresponding author*

Backstory

The story of this project emerges from a confluence of influences:

- The University of Arkansas, particularly the flagship campus in Fayetteville, has the stated goal to become one of the top 50 public research universities; this has been in the making a long time. The first public mention of the idea that I am aware of showed up in Faculty Senate meetings in October of 2000, in the remarks of the then-provost, Robert V. Smith (Smith, 2000). It may well have been in process for much longer.

- The Walton Challenge grant: in 2005, the Walton family (of Wal-mart) offered 300 million dollars to the University as a matching grant, IF the rest of the endowment campaign raised a similar sum. Over time, they were successful, and this created a permanent endowment for the Libraries, among many other well-advertised benefits to the campus, such as endowed chairs in some departments, and an array of scholarships. Our endowment was specifically earmarked for collections, but although our budget from the campus has been flat, that has freed some funds for other uses.

- Upgraded standards had improved our campus ratings and institution of programs such as First Year Experience (FYE) or University Perspectives (UP) had begun to push our retention and graduation numbers higher.
  - In parallel, the rise of our Honors College and its increasing prominence made it more likely that we could be working with students in other places and in other classes beside the common lower division opportunities in the library classroom.

- Students are not required to bring a computer, of whatever kind, to campus, nor are they assigned or lent one when they arrive. The David W. Mullins Library (Mullins), one of five libraries on campus, contains the largest general access lab, and the computing labs are heavily used, (Figure 1) but they are not something that can be scheduled for instruction. We previously scheduled pods of computers for instruction when we were controlling the computing in the building, but it happened seldom because of the demand for computers; lab computing in the Libraries was taken on about ten years ago by campus IT to help keep programs current and improve computer security.
With the downturn in the economy in 2008, several factors slowly kicked in: there was growth in the number of students attending college closer to home and where tuition was cheaper, the upgraded standards for students attracted more and better students, and the Arkansas Academic Challenge Scholarships, originally started in 2009, paid for by the state lottery, provided funding for students who previously might have been daunted by the costs of attendance. Over the next eight years, we had an increase in student enrollment of approximately seven thousand students, mostly undergraduates, between the fall of 2008 and fall of 2016 (numbers derived from tables in the Office of Institutional Research, http://oir.uark.edu). Other aspects, including winning seasons for the football team, NCAA placement in basketball, new dorms and apartments around campus, and other unknown causes contributed to this growth.

Not surprisingly, there’s been a lag in infrastructure behind enrollment. Several new buildings and lots of parking areas have been created in the last five years. However, previously planned renovation/expansion/asbestos abatement in Mullins has not yet occurred. To create more space for students in the University Libraries, particularly in Mullins, we have moved or weeded some collections, moved some to storage and moved much of the reference collection into the circulating collection to create social and study space, in a 2010-11 project titled “Extreme Makeover.” This has been very successful in developing social spaces and study spaces, but classroom or teaching spaces were not in the budget, and Mullins had and has only one classroom that allowed hands-on practice with library resources such as the catalog, databases and Libguides. This classroom was under considerable pressure, since many sessions are scheduled at specific times of year,
particularly in the first few weeks, for orientation and first year classes, and the last third of the semester, in term paper season. With fourteen librarians doing some teaching, one classroom (called Room 102) was not adequate. In addition, the hands-on classroom only seats twenty-five people and sometimes more computers were needed and students had to double up. Clearly Room 102 hasn’t been making the grade.

Figure 2 Busy Students in Mullins Library, post Wi-Fi upgrade

- With the Extreme Makeover, or at least at the same time, the Wi-Fi in the building was substantially upgraded, such that connectivity was available almost anywhere in the building, as well as in most buildings on campus.

- The Libraries had lost several librarians, including the librarian for English, to retirement or other employment, and was in process of hiring replacements. Concurrently, proposals for new ways to accomplish our mission have been encouraged, in part to accommodate the smaller staff and new duties as they evolve.

Enter Michelle Gibeault, who had used iPads to teach a population of athletes at her previous campus, and spoke of using them during her interview for the position of English and Communication Librarian, as well as later in a published article (Gibeault 2015).

In Gibeault’s view, as she presented and we later discussed, the key to her instruction is not the tablets per se, but the teaching strategies that they enable. The SCALE-UP classroom that Gibeault used to test active and collaborative learning pedagogies in conjunction with iPads for library instruction can be contrasted with the typical “tombstone-style” organization of a computer lab, with its opportunities for tuning out and other distractions. The SCALE-UP classroom, originally used in lower division Physics, has become famous for dramatically
affecting the success rates of women and minorities in college level STEM courses; it relies on group investigation and discovery of course material (typically in small groups of three) at large round tables (Beichner 2007).

Her presentation, along with some longer-term thoughts and frustrations, such as having small groups of grad students come in on-the-fly and having no place to work with them hands-on, spurred me to develop an application for the campus Teaching and Faculty Support Center, which had solicited proposals, asking for $2000 to buy a handful of iPads and a cart to take them around campus and to rooms in Mullins, to teach small groups and seminars. The refurbished Wi-Fi network streamlined the ability to get connected anywhere in the building, which was a huge factor in recognizing that it might be possible to make the technology work if the proposal were funded. Changes in the Libraries’ web site also made it more straightforward to view the resources on smaller screens, as we were adapting pages to be smartphone/tablet capable.

I considered seeing if they would also work for roving reference services, as some libraries do (Sharman and Walsh 2012, Stellrecht and Chiarella 2015), but this would have required many more tablets, more money, more management and planning, and assigning iPads to each librarian. The problem I was trying to solve and the thing we were particularly short of and focused on at the time, were space and technology to use to improve our students’ information literacy, either as scheduled or on-the-fly.

**Actions: What Could We Do?**

**Phase 1:** As mentioned, I created the proposal for the Teaching and Faculty Support Center, and prior to sending it forward, I submitted it to the Administrative group for their suggestions; their response was that I should hold off on submission, that they might be able to do something internally.

**Phase 2:** Meanwhile, Michelle arrived and became immersed in teaching. She found that she missed having tablets available for active learning processes and practices. I have had a long-term interest in active learning and in using technology to take instruction to the students, having been Library Instruction coordinator in a previous position in Mullins Library. We spoke together and decided to write an expanded proposal and ask for a larger grant. We worked with a friend from IT, Roy Hatcher, to choose the tablets and determine software support needed, such as how to update the tablets as a group. This is where the name “Project Ferrari” was generated, as an expression of our excitement about the newer technology and how we hoped to be able to zoom around campus and teach in new ways—and as a symbol of the running joke that we would thereby gain fame and fortune. As we were working on it, we were again reassured that the Libraries might be able to fund what we were asking for without the need to write a full grant proposal.

**Phase 3:** After lengthy discussions with IT and Library IT about what they thought would be the best tablets for the purpose, and examination of the literature, we submitted a request and a budget, with the following rationales:

- There was a lot of use of and formal and informal material about iPads in schools at all levels, from pre-school to medical school (Pappas 2012).
- Active learning and small group learning, with activities that can be done with iPads, are a very attractive goal, as described by Hegarty, Carbery and Hurley (2009) [and later, after our plan was initiated, in the context of program-oriented guided inquiry learning, as described by a team at Boise State University (Moore, Black, Glackin, Ruppel, & Watson 2015)].

- In 2014, tablets running on Android and other operating systems were generally cheaper, and sounded adequate, but fewer apps were commonly available, and the infrastructure for efficiently creating profiles, syncing, and updating Android tablets as a group was relatively nonexistent compared to the options offered for iPads; when we suggested using Android tablets, the head of collections and technology encouraged us to reconsider, given that the difference in cost over time would be small versus the projected utility.

- Michelle had used iPads before, and at the time, there were a lot of free apps that looked promising, but see commentary in the literature (Stellrecht & Chiarella 2015 among others), for a brief discussion of changes in the app market since we began to work on the proposal.

We submitted the plan and were given a little over $10,000, for 12 iPads (iPad Air models), a MacBook Air, and a charging/syncing cart (Figure 3). As Mullins is primarily a Dell ‘shop’ we were told that we were on our own with software and hardware support for the iPads, the cart and the updating. Roy helped us create a standardized profile so that we could update all the tablets at once through the MacBook Air using Apple’s free software, “Configurator,” and that was a big boost in ease and security. The iPads needed to be synced in order to be able to be logged in as the same email on the campus Wi Fi network, to maintain security and avoid having them locked down under an individual student’s Apple ID and password. We would also be able to lock down any iPad that went missing, as we tracked the serial numbers.

Phase 4: We requested a University email and Outlook calendar for the set of iPads, allowing them to be scheduled separately from the other calendar for the classroom, which was a homegrown system. Scheduling the set is like making an appointment with another colleague, a task familiar to most of us. Getting an email for something (the iPad set) rather than an individual person, took some persuasion and time (weeks).

Phase 5: In the fall of 2014, we began to take the set of iPads around campus and in Mullins to teach, both as scheduled sessions and off-the-cuff, when available. Michelle has been the most frequent user of the set, by far, and has a set of related assignments, a competitive set of questions known as the “Library Rally” that she uses in the English 1013 classes and for Communication 1313 (Basic Speech), as well as World Literature. This assessment “recipe” for the Library Rally will be featured in ACRL’s forthcoming Library Assessment Cookbook (Gibeault 2016).
Serendipitously, but certainly deriving from knowledge of the benefits of student interaction in learning, the design of classroom spaces where many of the library instruction sessions for core undergraduate classes are now taught are in a new building which supports active learning practices. Champions Hall, which opened in the fall 2015 semester, features classrooms with round tables that seat four to five students and are perfect for accommodating the Library Rally (which requires paired students to work with one device). In describing how teaching in a classroom with round tables changes the classroom and students’ dynamic, one of the Composition instructors, Julia Paganelli, found only advantages: “After conducting a few classes, I realized what an asset the tables are to my students’ learning. My students are able to conduct small discussions and then bring their thoughts, as a team, to the rest of the class. It allows all my students to be heard instead of a select few.” (Gibeault 2015b).

In other settings, I have used the iPads for some classes in Soil Science and upper division Nutrition, especially when the classes were in other buildings, though I have not had as
formalized a program because of the diversity of subjects taught; one librarian, Kathleen Lehman, has used them for University Perspectives, our first year experience program, and described them in an email message to the author (April 14, 2016), in the following ways:

“I’ve used the iPads for UP for teaching my own sections (two in the fall) and with one other instructor's section for doing scavenger hunts that get them learning about the library. They can use their phones, too, if they like, but each group of 3-4 students is given an iPad so they search the library webpage and catalog and so they can take pictures of some of the places the hunt asks them to find. Since we don't have a research project due in the class, I found this was a fun way to get them in the library and exploring what we have without doing the traditional “here's how to search” class. I think the students enjoyed it - the incentive of most class/grade points for the top teams and fabulous prizes (pens, thumb drives, candy, etc.) helped, too. The other instructor that I ran the hunt for said she got a kick out of seeing the students carrying random things around the library (they have to find a map, a kid's book and some other books).”

It has been suggested that they could be used for sessions in Special Collections, to take digital photos of items for further study, but there are preservation concerns which have limited that potential use. Using them to access images, in journalism, history, art or sociology, such as from ArtStor, or to sample music databases such as Naxos, would seem to be ideal for this technology, but while we have talked about it in the department, I have no knowledge that anyone has tried yet.

We have held several training and practice sessions for the librarians. Though students have seemed to find the iPads very easy to use, teaching with any new technology can be daunting. Relatively few librarians have taken up the challenge, though the use of the set by classes in first year English and Communication takes a lot of the pressure off the single classroom, and that in itself has been useful. If we had had the tablets in house by the summer of 2014, as we initially planned, I think we might have had more success in recruiting the other librarians to use them, with some time to get acquainted and plan teaching strategies before the start of the semester. We may run some practice sessions in summer 2016 to encourage use.

As a baseline, we set up icons that take the students straight to the Libraries’ page, and have the Wi-Fi set up to log in automatically with the iPad email and password. Although we simplified the number of icons on the screens to reduce confusion, there have been times when the tablets became a distraction—I had one class where the students decided to take photos of each other, but generally they have been used conscientiously and returned promptly. We put rubber sleeves on them to make them easier to hold, and added hand straps for additional security in longer use. Hard protective cases for the individual iPads were considered beyond the budget, although I purchased an iPad and a heavy duty case of my own, which has a back strap that allows me to show a small group what I have on my screen. This is handy for a small group demonstration, as I can hold up and show the screen between steps if there are too many students to just look on over my shoulder.
Things We Learned

Keeping the tablets updated on software, especially the operating systems, is important. Some updates, such as the addition of Apple Music, increased the battery drain between sessions. We keep a small notebook in the case to allow us to track problems with individual tablets; they are numbered on the back with stickers inside the silicon cases.

With the help of my graduate student, we have been doing the updates on the tablets one by one, for the most part, though we still have the ability to do group updates if needed. It might be possible to go without the Macbook Air if one determined to only update one iPad at a time, but it was helpful in the establishment of the set as an entity for the network and email set-up, and the initial configuration. It would be useful if the set caught malware, as we could use it to restore the settings on all the iPads at once, versus one by one.

Take advantage of local expertise. Marei Houpert, the Agriculture graduate assistant, is working on a PhD in public policy, and helped us draft the use policy for the iPads. Among her other duties, she also charges and updates the iPads as needed; they are stored in her office, which makes it very convenient, and she is savvy and skilled. (Figure 4)

Figure 4  Marei Houpert, a PhD in progress and our savvy support person

Having students delete photos that they have taken is important, both for confidentiality and for space on the iPads. The iPads are logged into the Wi-Fi as the set, so abuse of the system wouldn’t be attributed to individual students, but it is better to keep things clean.
We have been leaving the tablets turned on between sessions, so that they are almost instantly available. They generally hold their charge well, although, as mentioned, some updates have caused trouble. In use, it is reassuring to set the iPads in the case evenly, as they are returned, so that you can immediately tell, as with a dozen eggs in a carton, if one is missing. When we take twelve iPads to a class it means that it is usually easy to have students work in pairs or groups of three and accommodates most of the smaller class sizes.

The charging/syncing cart is heavy and bulky, and although it has wheels, it is a bit challenging to take around campus. Our campus has historically grown organically rather than on the basis of specific planning over time, and so some buildings are more out of the way than others. The big cart has not held up as well as one would hope—it is possible, among other things, to close the case on the integral power cords, which doesn’t improve their longevity; the cooling fan on the case died almost immediately. We should have kept better track of warranty dates.

- One page of the Libguide is a list of ADA capable entries in various buildings on campus, to assist in the transport of the iPads via the big cart. No one would want to haul the cart up or down stairs, or worse, have it fly down stairs. The case itself is very tough, but I’m not certain the tablets would survive, despite the padding.

More recently, we have purchased a pair of hard cases with wheels, and can split the set and take six to one place and six to another. This is inspired in part by the physical attributes of the charging cart, and in part by the fact that a noticeably greater number of students have laptops and/or tablets of their own than did even two years ago; this means that supplementary tablets are less necessary, and it also expands the potential utility of the sets to more than one class at a time.

One advantage of the iPads is, of course, apps. I have been building very short videos on my own iPad with AdobeVoice, and then sharing them with faculty and students in classes such as Honors UP classes, or to help answer questions or particular problems that people have over and over, such as putting citations from our catalog into Endnote Basic. We have not had much problem with students installing apps on their own, in part because the iPads are logged in as themselves rather than being logged in via students’ identifications.

**Things We Might Do Differently**

- We gave up after a while on the apps we had anticipated using, largely because the project had no budget for software and as we were developing the proposal and waiting for the purchases to go through, several of the apps we intended to use went from freeware to a subscription model.

- It’s clear from the start that Apple’s model for iPads is for single users, no matter how popular they may be with educators. Downloading apps to multiple iPads is not always easy; free apps are one virtue, but many of the best apps are now at a price and that adds up quickly.
• It might be well to give the iPad set a more distinctive email address. We had a minor conflict with the College of Education and Health Professions, when they arranged for a similar set with a nearly identical email address.

• I would buy a charging stand for the tablets, or just charge them from a power strip, as we have been doing recently, and transport them in smaller cases, if I were doing it over (see Figure 4). The large case has been somewhat problematic, both for transporting the iPads around campus and for taking them off campus.

• We wrote a policy/procedure document somewhat after the fact, directing that librarians have first choice of times with the tablets and that other uses will be discussed with heavy users. This stemmed from an occurrence where I lent the set of tablets to a graduate student to use to give the library staff a survey. This turned out fine, but some worried that the tablets could have disappeared in the interim. I would write the policy at the outset and revise as needed.

• We determined at the start that we couldn’t lend individual tablets, even to librarians, so that the full set would be available at a moment’s notice for instruction. In retrospect, I would have requested that we buy a spare to allow for individual practice. As the library is a PC based shop, we couldn’t count on familiarity, though some librarians have iPhones and iPads of their own.

• I would have considered adding wireless/cellular access to the proposal. This would have added substantially to the cost, but needing Wi-Fi reduces the utility of the set in some cases, such as if taking the set off-campus/to a less-networked part of campus for instruction.

We should have had more training initially, so that people would feel comfortable with the whole set-up. We have developed a Libguide for staff users, which was mentioned favorably in an article in the ACRL’s Instruction Section newsletter, Tips and Trends (McPherson & Committee 2016), but guides only go so far, and it does take a certain amount of practice to get accustomed to planning a strategy and distributing, using, and collecting the iPads. We might have worked harder to arrange for apps that would project presentations to tablets, like Nearpod, if we had had demand from librarians who favored using presentations and a budget for software. Most are not expensive, but are on a monthly cash basis, a difficult model for our kind of funding circumstances.

As on many campuses, with time more students are bringing their own machines to use, or find that they can use their smartphones to do basic searching, and there is less instruction requested over time on a scheduled basis. Conversely, Michelle’s to build a specific program of instruction for her clientele are paying off with a significant number of sessions per semester. She has coordinated with the departments to put forward instruction that gets the students what they particularly need to do well with the lower division assignments that they face. She has worked very closely with
the coordinators of English Composition and Basic Speech to be sure that the assignments are apt for and aligned with what the students are going to do later in the semester. Therefore, her instruction is much more all of a piece than my own, which varies significantly among my patron populations. This is in line with the findings of Nguyen, Barton and Nguyen (2015) who, in their literature review of the use of iPads in higher education, that there is not a specific benefit of iPad as iPads in teaching, if their use isn’t grounded in a planned strategy for results.

Conclusions

In the end, we agree that we would do very little differently. With use, we found that if the primary use of the iPads is to help students develop fluency with the library’s website, the need for apps is less urgent than we originally expected or would have projected. This point cascades into the next-- the need to sync the tablets together is less important if fewer apps are used, making a charging/syncing mechanism itself less crucial, particularly given the cost of the cart and its other deficits. Knowing what we know now, we might get the two smaller hard cases and find another way or let go of the idea of needing to create profiles and sync the tablets together, since that affordance adds so much cost and complexity. Currently we charge the tablets using power strips and their original charging cords, which works well and are actually faster per tablet than using the charging cart. As a spontaneous venture, it has done most of what we hoped. If we did it all again, we would do more planning, training and practice, encourage the use of the tablets more, and aim to get more buy-in for active learning practices or a budget to provide the software to allow presentations to be shared.

Endnotes


Sharman, Alison, and Andrew Walsh. (2012). "Roving Librarians at a Mid-Sized, UK-Based University." *Library Technology Reports* 48, no. 8: 28-34.